IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

WSOU INVESTMENTS, LLC d/b/a BRAZOS LICENSING AND DEVELOPMENT, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 6:20-cv-454 Civil Action No. 6:20-cv-461 Civil Action No. 6:20-cv-465

DEFENDANT'S RESPONSIVE MARKMAN BRIEF

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Microsoft submits this brief in response to WSOU's Opening Claim Construction Brief (Dkt. 49) addressing terms of U.S. Patent Nos. 7,106,702 ("the '702 patent"), 7,366,160 ("the '160 patent"), and 8,274,902 ("the '902 patent").

I. BACKGROUND

A. The '702 Patent

The '702 patent is directed to ensuring the availability of authentication, authorization and accounting (AAA) functionality in a wireless network. AAA is a framework used to, among other things, control network access, enforce security policies, and audit network usage. The patent contends that if only one "node" on a network is capable of performing AAA functionality and/or is the sole location for the AAA user database, "the destruction of that node or its separation from the network would undesirably disrupt the entire network." *Id.*, 1:33-35. The patent asserts that duplicating AAA functionality across more than one node can prevent network disruptions because "back-ups may take over when functions and/or resources are lost due to failure or otherwise." *Id.*, 1:25-26. However, the patent states that duplicating this functionality across every node on the network would be unduly burdensome, because changes to the database of one node must be broadcast to the database of every other node. *Id.*, 1:45-50.

With a "Detailed Description Of The Invention" that runs only two columns, the specification offers limited information on how to solve these purported problems. What is disclosed is the use of a plurality of network "nodes," each having its own user database and capable of independently performing AAA functions. Just two of these nodes (the "active" nodes) are used to perform AAA functions at any given time. *Id.*, 3:13-29. These two active nodes keep their databases synchronized by communicating relevant changes to each other and also monitor one another "to ensure they are both active and/or connected to the network." *Id.*, 3:40-55. When one of the nodes detects that the other is offline, "the remaining active node

locates and/or selects another node for activation." *Id.*, 3:65-4:1. Once the active node has selected such a node, the active node synchronizes its user database with the selected node's database and then activates the AAA functions of the selected node, thereby making that node an active node as well. *Id.*, 4:33-37.

B. The '160 Patent

The '160 patent is directed to predicting when a service on a network (*e.g.*, a video call) will fail. The patent explains that users and network service providers enter into contracts, referred to as service level agreements (SLAs), that specify an acceptable failure level for a service, such that if that level is not met the service provider may be required to pay the user. '160 Patent, 1:20-23, 5:20-24. While the patent acknowledges that the prior art could measure network attributes (*e.g.*, bandwidth) to determine a trend, *id.* at 1:10-13, the patent asserts that "[a]t present there are no tools for forecasting accurately the failure of a network service." *Id.*, 1:24-25. The patent proposes to address this purported problem through a mechanism that determines "a trend" of a measured "service indicator," where this "trend can show whether the indicator is likely to cross a defined threshold or even determine when it will cross the threshold." *Id.*, 2:15-19.

Specifically, the '160 patent describes monitoring and measuring multiple "parameters of a network," such as "packet losses; time-delays between packets; jitter or stability; bandwidth; bandwidth stability; and the directionality of the communication." *Id.*, 2:67-3:3. The patent suggests that these "parameters of a network" are network-health metrics specified in a Service Level Agreement and extrapolated or calculated from directly-measured network-health metrics – *e.g.*,"packet loss" is a parameter of a network, determined from directly-measured network-health metrics such as the count of packets in and packets out. Multiple "parameters of a network" determine the "value of a service indicator" – *e.g.*, packet loss and jitter determine

whether voice call quality is "good." The patent further explains that by extrapolating a "trend" of the "service indicator" a prediction can be made as to when this "service indicator" might exceed some defined threshold. This concept of prediction is central to the claimed invention; in the Nov. 19, 2007 Response to Final Rejection, the applicant explained that the amended claim is limited to "forecasting" the "time remaining for a threshold crossing a level of service," or "a level of service after a predetermined time."

C. The '902 Patent

The '902 patent is directed to estimating the performance of links (*e.g.*, connections between servers, routers, base stations) on the "inside" of a network based on measurements taken from nodes on the "end" of that network (*e.g.*, mobile phones). In particular, the '902 patent is focused on a mechanism whereby a single "point" (*e.g.*, a computer) on the network measures the "packet loss rate" of end points and uses those measurements to estimate the packet loss rates of network connections or "links" on the inside of the network. Computers in packet-switched networks communicate by exchanging "packets" of information, similar to how letters are sent through the postal system. The '902 patent notes that the "performance of data networks is sensitive to the loss of packets" and that to "optimize the performance of a network, the operator needs to have information about packet losses on the network." '902 patent, 1:12-15. The patent suggests that a "[p]articular advantage would be gained by monitoring most or all of the links between" the components of a cellular network, *id.*, 1:34-38, but contends that performing such monitoring using "conventional methods" would "require a monitoring device to be deployed on each of the links that are to be monitored" which the patent contends is not feasible. *Id.*, 1:39-44.

The '902 patent claims to addresses this purported problem with a system that estimates packet loss rates on interior network links by collecting end-to-end packet loss data at a single

point, *id.*, 4:36-45, and using that data to estimate the packet loss rates on individual links "downstream" of the collection point. *Id.*, 4:49-56. While the claims of the patent recite the general process of "collecting data" and "estimating a packet loss rate," the specification focuses on a particular embodiment of the estimation step. Specifically, the only disclosures provided in the specification detail implementing the '902 patent's method on a *tree* network using one of two referenced algorithms. *Id.*, 2:66-3:3; 4:57-5:2; FIGs. 3, 4, 6. The tree networks discussed in the '902 patent are a well-known way to structure a network and are distinguished by having a hierarchical topology, with each node in the network having an arbitrary number of child nodes.

II. LEGAL STANDARDS

A "court construing a patent claim seeks to accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004). In construing the claim, "the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean. Those sources include the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (internal quotation marks and citation omitted). Dictionary definitions "are often useful to assist in understanding the commonly understood meaning of words." *Id.* at 1322. However, it is not proper to adopt "a dictionary definition entirely divorced from the context of the written description." *Id.* at 1321.

The claims "must be read in view of the specification, of which they are a part." *Phillips*, 415 F.3d at 1315 (citation omitted). "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." *Id.* at 1316 (citation omitted).

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). "A claim is considered indefinite if it does not reasonably apprise those skilled in the art of its scope." *IPXL Holdings, LLC v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed Cir. 2005).

III. UNCONTESTED TERMS IMPROPERLY BRIEFED BY WSOU

1. **"AAA function capable", "equipped to carry out authentication, authorization and accounting (AAA) functions for the network", and "equipped to conduct authentication, authorization and accounting (AAA) functions for the network"**
2. **"the AAA functions"**

WSOU's Opening Brief incorrectly characterizes these terms as "disputed" (Dkt. 49 at 2),[1] and repeatedly argues against constructions that Microsoft has expressly stated it is not advancing. *Id.* at 2-4, 9. During the parties' discussions regarding *Markman* briefing, Microsoft informed WSOU counsel it did not believe these terms required construction, and proposed excluding them from the parties' briefing. Ex. 1 (12/29/2020 Oliver Eml.). WSOU proceeded to rely on Microsoft's representation to justify a five-page reduction in the parties' agreed-upon page limits for their respective briefs. Ex. 2 (12/30/2020 Siegmund Eml.). Microsoft agreed to this reduction based on the understanding that these terms would not be submitted to the Court for claim construction. The Court should disregard WSOU's briefing as to these two terms and need not construe these terms.

[1] Unless otherwise noted, citations herein are to the docket in Case No. 6:20-cv-00454.

IV. DISPUTED TERMS FOR CONSTRUCTION

A. Terms of U.S. Patent No. 7,106,702 (Case No. 6:20-cv-00461-ADA)

1. "active nodes"

Microsoft's Proposed Construction	WSOU's Proposed Construction
nodes that carry out the AAA functions for the network by employing their respective user databases	Plain and ordinary meaning, where the "active" qualifier refers to a state of the node's AAA functionality.

The parties agree that "active nodes" are nodes "in an active state of AAA functionality." The parties, however, dispute what being "in an active state of AAA functionality" entails. Consistent with the specification and the claim language, Microsoft's construction requires active nodes to (1) actually carry out AAA functions, and (2) employ their respective user databases to do so. In contrast, WSOU contends that a node can be an "active node" without having a user database, despite the fact that the patent expressly requires the use of a user database to conduct AAA functions.

Microsoft's construction of "active nodes" comes directly from the specification, which discloses "active nodes that in fact carry out the AAA functions for the network by employing their respective user database." '702 patent, 2:8-11. Accordingly, WSOU's contention that Microsoft's construction somehow represents a "departure from the specification lexicography" is plainly incorrect. *See* Dkt. 49 at 5. WSOU's appeal to lexicography is particularly puzzling in light of the fact that, as WSOU notes within its own Opening Brief, "[l]exicography only arises when the patent drafter 'clearly, deliberately, and precisely define[s] the term.'" *Fisher-Rosemount Sys., Inc. v. Invensys Sys., Inc.*, No. A–13–CA–587–SS, 2015 WL 1275910, at *11 (W.D. Tex.); *see also* Dkt. 49 at 17–18. "Clear definitions are usually set off by quotation marks or marked by the word 'is.'" *Rosemount*, 2015 WL 1275910, at *11 (citing *Sinorghem Co., Shangdon v. Int'l Trade Comm'n*, 511 F.3d 1132, 1136 (Fed. Cir. 2007)). The patent drafter did

not provide an express definition for "active nodes" here, so any appeals to lexicography are inapposite.

Only Microsoft's construction reflects the requirement of the '702 patent claims that "AAA functionality" involves actually carrying out AAA functions using the nodes' respective user databases. This requirement applies to all the patent's claims, as confirmed by the description of every embodiment of the patent, as well as the '702 patent's Abstract. *See id.*, Abstract ("The active nodes use their respective databases to conduct the AAA functions for the network"); 2:8-11 ("The plurality of nodes includes a subset thereof which are active nodes that in fact carry out the AAA functions for the network by employing their respective user databases."); 2:22-24 ("The method includes: employing a subset of the plurality of nodes as active nodes, the active nodes using their respective user databases to conduct the AAA functions for the network"); *see also id.*, Claim 1 (separately reciting "a plurality of nodes which are AAA function capable" and "selecting two of the plurality of nodes to be active nodes").

WSOU relies on excerpts of the specification that *support*, rather than undercut, Microsoft's construction. For example, WSOU notes the specification's disclosure that "preferably, all of the nodes are initially provisioned with duplicate copies of the user database employed to carry out AAA functions." Dkt. 49 at 5 (quoting '702 patent, 3:29-31). WSOU then argues that under Microsoft's definition, "all nodes of this embodiment would qualify as 'active nodes'—regardless of their present *state* of AAA functionality. . . ." But this crabbed reading incorrectly applies Microsoft's construction; simply being provisioned with a copy of the database that is employed to carry out AAA functions does not make a node "active." Rather, under Microsoft's construction, regardless of which nodes have a user database, only those nodes

that *in fact carry out* AAA functions (*i.e.*, those in an active state of AAA functionality) using such a database qualify as "active nodes."

Moreover, only Microsoft's construction captures all embodiments of the claimed invention because the '702 patent discloses that the active nodes carry out the AAA functions in its descriptions of every embodiment, as shown above. WSOU attempts to distract from the straightforward application of this description by pointing to the '702 patent's use of the conjunction "and/or" to suggest that in an alternative embodiment, an active node's *server* carries out AAA functionality for that nodes. *See* Dkt. 49 at 5-6. Assuming *arguendo* that the '702 patent discloses an embodiment in which a server carries out the AAA functions, Microsoft's proposed definition would not exclude it. The patent drafter's initial description of an "AAA server" confirms that the use of an AAA server falls within the scope of the active node's own functions. *See* '702 patent, 3:7-9 ("Each node is capable of *acting* as the AAA functional entity for the network, *e.g.*, *by including and/or supporting a AAA server*") (emphasis added). That is, if an AAA server included on or supported by a node were to conduct AAA functions, the patent drafter would understand the process to be carried out *by* the active node, and therefore within the scope of Microsoft's construction.

Finally, the doctrine of claim differentiation does not proscribe the requirement that active nodes must employ a "respective user database." In support of this specious argument, WSOU notes that independent claim 1 does not expressly recite a "user database" element, while dependent claim 8 does. *See* Dkt. 49 at 6–7. But claim 8 specifically requires "provisioning each of the plurality of nodes with a *duplicate copy* of a user database," which is not the same as provisioning a node with a user database. Accordingly, claim differentiation does not apply here. *See Koninklijke Philips N.V. v. Zoll Lifecor Corp.*, No. 2:12-cv-1369, 2016 WL 6917267,

at *51 (W.D. Pa. Feb. 3, 2016) ("[T]he doctrine of claim differentiation only applies if the dependent (or other) claim had 'exactly the same scope'") (quoting *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1538 (Fed. Cir. 1991)).

The requirement of a "respective user database" is consistent with the specification, which, as excerpted above, repeatedly explains that each node is "initially provisioned with a user database," *id.*, 2:5–6, and that active nodes carry out AAA functions using "*their respective user database*," *id.*, 2:6–11; 2:22–25. Moreover, WSOU cannot credibly argue that this is a requirement of only certain embodiments because the '702 patent's Abstract, expressly provides that active nodes have their own respective user databases. *See id.*, Abstract ("Each of the nodes has a user database . . . . The active nodes use their respective user databases to conduct the AAA functions for the network."); *see also Red Arrow Prods. Co. v. Resource Transforms Int'l, Ltd.*, No. SA–03–CA–751–H, 2008 WL 5088648, at *1 (W.D. Tex. Oct. 20, 2008) (quoting *Hill–Rom Co. v. Kinetic Concepts, Inc.*, 209 F.3d 1337, 1341 n.1 (Fed. Cir. 2000) ("We have frequently looked to the abstract to determine the scope of the invention")).

2. "monitoring the active nodes to determine if one of the active nodes gets disconnected from the network", "said active nodes monitoring one another to detect if an active node becomes disconnected from the network", and "monitoring the active nodes to detect if one becomes disconnected from the network"

Microsoft's Proposed Construction	WSOU's Proposed Construction
two active nodes monitoring one another to detect if one becomes disconnected from the network	Plain and ordinary meaning

The parties dispute whether the "monitoring" phrases should be limited to the decentralized monitoring process described in the '702 patent, or whether "monitoring" can refer broadly to any arbitrary monitoring logic, performed by some undisclosed entity. The broader reading of these phrases advanced by WSOU would introduce written description problems, as the specification sets forth only one method of "monitoring" and one of ordinary skill reading the

specification would not have understood the inventors to be in possession of other monitoring methods.

Where, as here, the specification describes only one monitoring protocol, the Court should limit the "monitoring" phrases to that protocol. *See, e.g., Wang Labs., Inc. v. America Online, Inc.*, 197 F.3d 1377, 1383 (Fed. Cir. 1999) (because the "only embodiment described in the '669 patent specification is the character-based protocol, [ ] the claims were correctly interpreted as limited thereto"); *General Am. Trans. Corp. v. Cryo-Trans, Inc.*, 93 F.3d 766, 770, (Fed. Cir. 1996) (where the teaching in the specification was "not just the preferred embodiment of the invention [but, rather,] the only one described," the district court erred by interpreting the claims as encompassing matter beyond this sole embodiment). In two instances, the specification uses the passive phrase "[t]he active nodes are monitored" without identifying what entity performs the monitoring. But every time that the specification actually describes the monitoring process, it explains that "monitoring," in the context of the '702 patent, refers to "two active nodes monitoring one another to detect if one becomes disconnected from the network." *See* '702 patent, 2:11–13 ("The active nodes monitor one another to detect if an active node becomes disconnected from the network."); 3:40–41 ("two active nodes carry out the AAA functions *and monitor one another*"); 3:56–61 ("At decision step 24, it is determined if one of the active nodes is disconnected from or otherwise not available to the network 10. That is to say, *if one of the active nodes detects that the other is off-line*, then the process continues on to step 26, otherwise *if both detect that the other is still on-line*, then the process loops back to step 22."); FIG. 2 ("each of the two active nodes monitors the other").

Ignoring the clear boundaries of the specification, WSOU again attempts to invoke the doctrine of claim differentiation, arguing that because claim 3 of the '702 patent recites that

"each active node carries out the monitoring of the other[,]" claim 1 should not be read to include such a requirement. *See* Dkt. 49 at 7. However, "claim differentiation is a rebuttable presumption that may be overcome by a contrary construction dictated by the written description or prosecution history." *Howmedica Osteonics Corp. v. Zimmer, Inc.*, 822 F.3d 1312, 1323 (Fed. Cir. 2016) (citing *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011)). Here, the presumption has been rebutted. "The written description reveals only instances in which the claim language is satisfied" by two active nodes monitoring one another. *Howmedica*, 822 F.3d at 1323. A patent drafter cannot draft claims that go beyond what is taught in the specification, and the Court should not permit WSOU to broaden the scope of its independent claims based on clever drafting of the dependent claims. *See id.* ("Although a useful tool, claim differentiation does not require that 'the dependent claim tail . . . wag the independent claim dog' in this case.") (quoting *N. Am. Vaccine, Inc. v. Am. Cyanamid Co.*, 7 F.3d 1571, 1577 (Fed. Cir. 1993)).

Microsoft's construction also encompasses every possible embodiment of independent claim 11. WSOU's purported "additional basis to reject Microsoft's construction," which it characterizes as a separate "claim differentiation" argument, is a mischaracterization of Microsoft's position. *See* Dkt. 49 at 8. Specifically, WSOU incorrectly suggests that Microsoft's construction covers only embodiments where "precisely" two, and no more than two, active nodes are monitoring one another to detect if an active node becomes disconnected from the network. But nothing in Microsoft's construction dictates that only two nodes can be active at the same time (although the claims themselves never require more than two nodes be active). Under Microsoft's construction, this particular limitation is met as long as a pair of

active nodes are monitoring one another, regardless of the total number of active nodes in the network.

3. "each of said nodes having a user database"

Microsoft's Proposed Construction	WSOU's Proposed Construction
each of said nodes maintaining its own user database	Plain and ordinary meaning

The parties dispute whether the claimed "nodes" of the '702 patent each have their own user database. The specification and claim language clearly establish that there is an exclusive, one-to-one relationship between node and user database such that each claimed node has its own database. Indeed, in the Abstract, and consistently throughout the specification, the '702 patent frames the invention as requiring this one-to-one relationship. *See, e.g.*, '702 patent, Abstract ("The active nodes use *their respective user databases* to conduct the AAA functions for the network"); 2:3–11 ("In accordance with another aspect of the present invention, a wireless communication network includes a plurality of nodes, *each node being initially provisioned with a user database* and equipped to carry out authentication, authorization and accounting (AAA) functions for the network by employing *their respective user database*. The plurality of nodes includes a subset thereof which are active nodes that in fact carry out the AAA functions for the network by employing *their respective user databases*."); 2:22-24 (The method includes: employing a subset of the plurality of nodes as active nodes, the active nodes using *their respective user databases* to conduct the AAA functions for the network"); 3:7-10 ("*Each node* is also capable of acting as the AAA functional entity for the network, *e.g.*, by including and/or Supporting a AAA server, and is capable of *maintaining a user database* associated with the AAA functions."); 3:50-54 ("To maintain synchronization, any changes to the user database on one active node are logged, and the logged changes are communicated to the other active node so that *its user database* is similarly updated."); 4:33-38 ("At step 28, once the new node has been

selected, *its user database* is updated. That is to say, all the logged changes from *the remaining active node's user database* are communicated to the new node so that *its user database* can be updated.") (emphases added).

The '702 patent's consistent use of exclusive, possessive language ("its," "their respective," etc.) linking the active nodes to the user databases leaves no doubt regarding the one-to-one relationship between those elements. The claim language follows the same pattern. *See, e.g., id.*, Claim 8 ("each of said user databases being employed by *its respective node*"); Claim 11 (repeatedly reciting "their [the active nodes'] respective user databases"); Claim 13 ("the active node logs changes to *its user database*"); Claim 18 ("said active nodes using *their respective user databases*") (emphases added). Accordingly, WSOU's assertion that "[t]he intrinsic evidence contains no unambiguous disclaimer of the possibility for two nodes using the same user database" flies in the face of a plain reading of the specification and the claims.[2]

The disputed term phrase's inclusion of the word "having," as opposed to "having access to" or "using," further supports the concept that each node "has" its own user database. Microsoft agrees with WSOU that "the patentee's word choice here of 'having' should be given meaningful effect[,]" especially in light of the fact that the patent uses the term "using" elsewhere. Dkt. 49 at 9.

4. "activating the AAA functions of the active nodes"

Microsoft's Proposed Construction	**WSOU's Proposed Construction**
Indefinite	Plain and ordinary meaning

[2] Microsoft proposed the word "maintaining" within its construction in order to establish that the term "having" implies something distinct from "having access to" or "using," and because the specification explains that "[e]ach node . . . is capable of maintaining a user database associated with the AAA functions[,] '702 patent, 3:7-10. Microsoft can agree to a construction of "each of said nodes having its own user database," as long as any such construction incorporates an exclusive, one-to-one relationship between node and user database.

In the context of the '702 patent, a Skilled Artisan would not be able to reasonably understand what is meant by "activating the AAA functions of active nodes," because, even under WSOU's own definition, "active nodes" are already "in an active state of AAA functionality." *See* Dkt. 49 at 4; *see also* '702 patent, 3:19–20 ("active nodes have their AAA functions and/or servers activated or turned on"); 3:22–25 ("Herein, the terms 'active' and 'non-active' when used in the context of 'active node' and 'non-active node' refers to the state of the node's AAA functionality (*i.e.*, its AAA server is active or non-active, respectively)." Accordingly, under the '702 patent specification's description of "active nodes" (which WSOU characterizes as controlling lexicography), "activating" the AAA functions of an active node is impossible; only a non-active node can be "activated."

WSOU argues that "the use of the article 'the' in the phrase 'the active nodes' is simply an antecedent reference to those nodes selected '*to be* active nodes' in step (a)" of independent claim 1. Dkt. 49 at 9–10. This argument fails for at least two reasons. First, the patent drafter's decision to use two distinct phrases to refer to "selecting . . . nodes . . . *to be* active nodes" and "the active nodes" must be given meaning, and the former phrase cannot be read as providing an antecedent basis for the latter. *See, e.g.*, *Sensor Elec. Tech., Inc. v. Bolb, Inc.*, No. 18-CV-05194-LHK, 2019 WL 4645338, at *31 (N.D. Cal. Sept. 24, 2019) ("For a claim term to have antecedent basis support, an indefinite article (for instance, 'a' or 'an') must precede a claim term the first time the claim term is used in the claims. Subsequent references in the claims to the claim term must be preceded by a definite article (for instance, 'the' or 'said').") (citing *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1375 (Fed. Cir. 2008)).

Second, where the patent drafter intended to describe the process of selecting an inactive node and then activating it, the patent drafter knew how to do so using a proper antecedent reference. Indeed, the patent drafter used such language later in the very same claim. Steps (d) and (e) of claim 1 each use clear language to describe this process:

> (d) if one of the active nodes gets disconnected from the network; selecting another of the plurality of nodes *to become* an active node;
> (e) activating the AAA functions of *the node selected in step (d)*[.]"

'702 patent, Claim 1 (emphasis added). Because the patentee specifically chose to use language other than "the active nodes" to describe nodes that "will become" active nodes in steps (d) and (e), the phrase "activating the AAA functions of the active nodes" recited in step (b) cannot be given the meaning that WSOU advances. *See, e.g., Core Wireless Licensing S.A.R.L. v. LG Elecs., Inc.*, 880 F.3d 1356, 1366 (Fed. Cir. 2018) ("If the patentee intended 'unlaunched' to mean 'not running,' it knew how to express as much."); *Intellectual Ventures II, LLC v. AT&T Corp.*, No. 1:13–CV–116–LY, 2015 WL 4138590, at *23 (W.D. Tex. July 8, 2015) ("[C]learly, the patentee knew how to describe networks operated by a Telco in words that were clear. References in the specification, using different combinations of words, to such arrangement are numerous. Thus, the patentee's choice of language must be given weight.").

5. "geographic distance therebetween is maximized", "geographic distance between active nodes is maximized", "geographic distance between it and the active node which got disconnected from the network is maximized", and "node selected in step (d) is chosen to maximize a sum of a geographic distance between the active nodes and a geographic distance between the node selected in step (d) and the node which got disconnected from the network"

Microsoft's Proposed Construction	WSOU's Proposed Construction
Indefinite	Plain and ordinary meaning

A Skilled Artisan would not be able to reasonably determine where the "geographic distance" between two nodes is "maximized" within the context of the '702 patent for several reasons. First, in the context of a wireless network, as in many other contexts, there are many methods to calculate "geographic distance" between two points. For example, as one court explained in agreeing with a party's expert and the Patent Trial and Appeal Board ("PTAB"):

> [T]here are many methods to calculate 'distance' between sets of coordinates: the system could simply determine a straight-line distance ('as the crow flies') between two points; the system could determine an actual distance to travel based on the layout of the underlying street system (such as the so-called Manhattan distance); or the system could analyze traffic patterns and use an estimated time of travel between the points as an analogue for distance based on a least-traffic path, least stop lights path, highest speed limit path or many other similar variations.)

RideApp, Inc. v. Lyft, Inc., No. 18-cv-07152-JST, 2019 WL 7834175, at *11 (N.D. Cal. Oct. 16, 2019); *see also Fife & Drum, Inc. v. DelBello Enters., LLC*, No. 17-3676, 2019 WL 5692124, at *2 n.6 (D.N.J. Nov. 4, 2019) (noting, where parties disagreed on geographic distance between two points, that "[t]here are many ways to measure this distance—by GPS, crow and Google maps").

Here, the specification provides no indication of how to measure "geographic distance" between two nodes, leaving the Skilled Artisan to speculate as to whether the phrase refers to the length of cables, distance as the crow flies, or some other method of measurement. WSOU offers no counter to this point, and instead states in conclusory fashion that "a person of ordinary skill in the art would be able to readily determine which pair, if selected as active nodes, would result in a maximum geographic distance therebetween[.]" Dkt. 49 at 10. WSOU further argues that Microsoft "has failed to explain how any of the purported 'different methods of calculating' would produce different results here." *Id.* This argument misses the point. In order to be valid

under § 112, *the claim* "must set forth what the applicant regards as his invention[.]" *Allen Eng'g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002) (internal quotation marks and citation omitted). It is not up to the person of ordinary skill in the art to determine what the appropriate form of measurement is, or whether different measurement methods would produce the same result. Indeed, the Federal Circuit has held that when a claim's scope (and thus infringement) turns on selecting one of multiple tests or processes, that claim is indefinite. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341 (Fed. Cir. 2015) (concluding that patent was indefinite because it failed to teach which of three methods of measuring 'molecular weight' should be used).

Second, neither the specification nor any of the claims that include "geographic distance" limitations specify how to determine *when* a geographic distance is "maximized." The specification states "[p]referably, the newly selected node is also as geographically distant as possible from the active node which was just disconnect[ed] from or otherwise made unavailable to the network." '702 patent, 4:13–16. A Skilled Artisan would not reasonably be able to determine whether that requires creating a system that maximizes geographical distance to the fullest extent possible, or whether (and how much) other factors can be considered when determining the maximum "geographic distance" of the nodes (*e.g.*, the latency of communications with the new, distant active node). WSOU does not (and cannot) point to anything in the '702 patent that provides any clarity on this point, and instead argues that "Microsoft's objection appears to go to alleged inoperativeness under 35 U.S.C.A. § 101 or lack of enablement under 35 U.S.C.A. § 112, ¶ 1[.]" Dkt. 49 at 11. But inoperativeness and indefiniteness are not mutually exclusive—a claim can fail from both of these defects simultaneously. *See, e.g., In re Corkill*, 771 F.2d 1496, 1501 (Fed. Cir. 1985) ("Claims which include a substantial measure of inoperatives . . . are fairly rejected under 35 U.S.C. § 112.").

Third, a Skilled Artisan would not be able to select two active nodes such that a geographic distance between them is "maximized" because the geographic distance between any two nodes is fixed, and therefore cannot be "maximized" or "minimized." Again, WSOU offers no substantive response to this defect, instead repeating its assertion that the inability to "maximize" geographic distance between two nodes goes to inoperability rather than indefiniteness. Dkt. 49 at 12. But the fact that the '702 patent does not reasonably apprise a Skilled Artisan as to the meaning of "maximized" within the context of the '702 patent renders the claims containing these terms indefinite, not merely inoperable. *See Nautilus*, 572 U.S. at 901; *IPXL*, 430 F.3d at 1383–84.

6. "logging changes to the user databases for the active nodes thereby updating the same to reflect changes in information contained therein" and "wherein each of the active nodes logs changes to its user database thereby updating the same to reflect changes in information contained therein"

Microsoft's Proposed Construction	WSOU's Proposed Construction
Indefinite	Plain and ordinary meaning

The "logging" term phrases are indefinite because they contain multiple ambiguities and because the '702 patent provides no clear basis to choose between equally reasonable competing interpretations.

First, neither the claims nor the specification shed light on what is meant by the phrase "changes in information contained therein." The use of this phrase implies the existence of changes that *have already been made* to information contained in a system, which by definition must have been recorded somewhere in the system. Accordingly, a Skilled Artisan would not be able to ascertain what it means to "log" those changes to "the same" system, in order to somehow reflect an update that has already occurred. WSOU does not address the lack of any discussion of the logging process in the specification, and instead attacks a strawman, suggesting

that Microsoft objects generally to the use of the word "logging." *See* Dkt. 49 at 13. But Microsoft does not take issue with the use of the word "logging" alone—rather, the claims that recite logging are indefinite because it is not possible for a Skilled Artisan to understand what "logging" entails in combination with the other elements of this limitation.[3]

Second, one of ordinary skill would not be able to determine *which* "changes" are to be logged. The phrase "logging changes to the user database" provides no basis for determining whether this language requires logging when information contained in a user database changes or logging changes that are made to a node (or the network) in a user database.

Third, the phrase "updating the same" introduces even more ambiguity into the claims because it lacks an antecedent basis. WSOU attempts to dismiss this argument as "conclusory," claiming that "a person of ordinary skill in the art would readily recognize that 'updating the same' refers back to 'the user databases' term." Dkt. 49 at 13–14. But WSOU supports this argument by improperly importing language that is explicitly recited in claim 14 ("so that their user databases are similarly updated") into every claim that uses the phrase "updating the same," even though the other claims do *not* include the same explicit recitation. *See id.* at 14. It is equally plausible that "the same" could refer to "active nodes," which are recited in claims 9 and 18, and which are the entities that ostensibly perform the "logging" step in claim 13 ("wherein *each of the active nodes* logs changes to the user database"). Moreover, "the same" could also refer to the actual "log" of changes, or wherever the log of changes is stored, which is not specified by the '702 patent.

[3] WSOU also repeats its argument that the patent's failure to delineate what is meant by "logging" goes to inoperativeness or lack of enablement, rather than definiteness. This argument fails for the same reasons described above. *See, e.g.*, *Corkill*, 771 F.2d at 1501.

Where, as here, there are multiple plausible meanings of the terms and the patent does not provide guidance for choosing between them, the claims reciting those terms are indefinite. *See, e.g.*, *Halliburton Energy Servs., Inc. v. M–I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008) ("The fact that [the patent holder] can articulate a definition supported by the specification ... does not end the inquiry. ... [T]he claim is still indefinite if a person of ordinary skill in the art cannot translate the definition into meaningfully precise claim scope."); *dunnhumby USA, LLC v. emnos USA Corp.*, No. 13–cv–0399, 2015 WL 1542365, at *18 (N.D. Ill. Apr. 1, 2015) (finding claim term indefinite because "multiple plausible meanings exist without guidance among them") (collecting cases); *Light Transformation Techs. LLC v. Lighting Sci. Grp. Corp.*, No. 2:12–cv–826–MHS–RSP, 2014 WL 3402125, at *9 (E.D. Tex. July 11, 2014) (finding claims indefinite because disputed term was subject to multiple plausible constructions).

B. Terms of U.S. Patent No. 7,366,160 (Case No. 6:20-cv-00454-ADA)

1. "selecting two or more parameters of a network" and "measuring and/or calculating at two or more times values of the network parameters"

Microsoft's Proposed Construction	WSOU's Proposed Construction
selecting two or more different types of parameters of a network / measuring and/or calculating at two or more times values of the two or more different types of network parameters	Plain and ordinary meaning

The parties dispute whether these limitations can be met when the *same* network parameter is selected (or measured and/or calculated) twice. Microsoft's construction is consistent with the plain meaning of "two or more parameters" and accounts for the fact that "parameters" is recited in the plural form in both of these phrases. In contrast, in order to overcome the deficiencies in its Complaint, WSOU has adopted the untenable position that these limitations are satisfied when *the same parameter* (such as "Bandwidth") is selected (or

measured and/or calculated) twice.[4] In an attempt to preserve its implausible infringement theory, WSOU urges the Court not to construe these terms. Dkt. 49 at 15.

A plain reading of the claim language supports Microsoft's construction. Claim 1 requires determining the "value of a service indicator as a function of . . . parameter values." '160 Patent, Claim 1. Per the claim, a "service indicator" value must be determined from more than one "parameter value" because the first two steps require "selecting *two or more* parameters" and measuring or calculating the "values of the [two or more selected] network parameters." *Id.* (emphasis added). The specification provides further support for Microsoft's construction, as it provides a list of several different types of network parameters from which the "two or more parameters" recited in claim 1 may be selected. *See id.*, 2:67–3:3 ("These parameters include in particular: packet losses; time-delays between packets; jitter or stability; bandwidth; bandwidth stability; and the directionality of the communication."). The specification further explains that "[a] *plurality* of network parameters can be selected to define the level of service as a function of the service or group of services concerned." *Id.*, 3:21–23.

Further confirming that claim 1 requires at least two different types of parameters, the specification explains that "[t]he parameters can be weighted as a function of their importance for a given level of service. Weighting gives dominant importance to the most important parameters in determining a given network service trend." *Id.*, 3:23–29. This weighting process would be meaningless if the claimed method could be satisfied using only one type of parameter, as that parameter could not be "more important" than itself.

[4] Microsoft has filed a motion to dismiss WSOU's Complaint based in part on this pleading deficiency, as WSOU has not plausibly alleged that Microsoft infringes these limitations. That motion is fully briefed. *See* Dkts. 20, 27, 28.

Additionally, measuring the same parameter twice cannot satisfy the "two or more parameters" limitation because the patent separately recites the requirements of "two or more" parameters and "measuring and/or calculating" those parameters "at two or more times." *See id.*, Claim 1; *see also* FIG. 1 (separately depicting steps of "measur[ing] parameters at one time" and "measure[ing] parameters at another time"); FIG. 3 (notating separate parameters "P0," "P1," and "P2" to be measured "at several times").

WSOU attempts to justify its objection to this plainly-described requirement by arguing that the intrinsic evidence does not "unambiguously disclaim[] selecting two or more parameters of *similar* type." Dkt. 49 at 16. In support of this statement, WSOU points to the specification's list of example parameters and description that "parameters *of this kind* enable the reliability of the network service to be determined, for example." Dkt. 49 at 16 (citing '160 patent, 2:64–3:8) (emphasis WSOU's). But the emphasized phrase "of this kind" in the excerpted passage of the specification refers to *multiple types of parameters* (packet losses; time-delays; jitter or stability, bandwidth; bandwidth stability; and the directionality of the communication). *See* '160 patent, 2:67–3:3. It does not suggest that selecting *one* of these types of parameters twice could satisfy the limitations of claim 1.

Finally, WSOU's position should be rejected because it would render the '160 patent invalid, as the patent's Background section explicitly states that the prior art "BMC Software's 'Patrol Dashboard' uses a network monitoring method which measures the bandwidth of a network at different times and determines a bandwidth trend as a function of the measurements." *Id.*, 1:10–13. The '160 patent's reliance on *multiple* types of parameters is a core aspect of its purported novelty over the prior art that WSOU cannot read out of the claims in order to improperly broaden its infringement allegations. This provides an independent basis to adopt

Microsoft's proposed construction. *See, e.g.*, *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1367 (Fed. Cir. 2002) ("[C]laim language should generally be construed to preserve validity, if possible.") (citation omitted).

2. "network parameter"

Microsoft's Proposed Construction	**WSOU's Proposed Construction**
measurable service level specifications from which service indicator values can be determined	Plain and ordinary meaning

The parties agree that the words "network" and "parameter" are terms of art. *See* Dkt. 49 at 16. The key dispute to resolve with regard to the term "network parameter" is whether a single metric can satisfy both the "network parameter" and "service indicator" limitations recited in the '160 patent. The fundamental principles of claim construction demand that this cannot be the case, as "[i]t is well understood that 'different claim terms are presumed to have different meanings.'" *SpaceTime3D, Inc. v. Samsung Elecs. Co., Ltd.*, No. 2:19-cv-00372-JRG, 2020 WL 7183538, at *8 (E.D. Tex. Dec. 7, 2020) (quoting *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008)).[5]

Microsoft proposes a construction of "network parameter" that is directly supported by the specification and claim language. The '160 patent expressly states that "network parameters" are "also known as service level specifications." *Id.*, 2:64–65. WSOU suggests, without support, that this description "is not offered in the specification as a *definition*, but rather as an *alternative description*." Dkt. 49 at 17. But that is a distinction without a difference, and in any event, WSOU's argument ignores the context of the '160 patent. Microsoft's definition is

[5] Microsoft can agree to construe "network parameter" in accordance with its plain and ordinary meaning as long as any such construction incorporates the requirement that a network parameter (*e.g.*, packet losses; time-delays; jitter or stability, bandwidth; bandwidth stability; and the directionality of the communication) cannot also satisfy the "service indicator" element separately recited in the claims of the '160 patent.

consistent with the intrinsic evidence, which establishes that the particular elements of the claimed invention are determined by SLAs. *See, e.g., id.*, at 1:20–22 ("Background" section explaining that "[i]n service level agreements (SLAs), between a network service provider and a user, the service provider undertakes to provide a network service with a given failure level); 4:53–57 ("It is therefore possible to establish a time remaining up to a threshold crossing, a level of service after a predetermined time period, a service provision capacity before failure, or a mathematical expectation of loss *as a function of the applicable service agreement*.").

There can also be no dispute that "network parameters" are measurable, as the '160 patent repeatedly describes the measurement of network parameter values. *See, e.g., id.*, Abstract ("The invention therefore selects two or more parameters of a network representative of a network service and variable in time, *measures at two or more times values of the network parameters*, determines at two or more times the value of a service indicator as a function of said *measured parameter values*, and determines a trend of the indicator as a function of said determined indicator values."); 2:54–56 ("In a fourth step, a service trend at the later time is determined from the *measured parameters*. Various types of *parameter measured* as a function of different network services are described below.); 4:14–18 ("The *measured parameters* are represented along three axes defining a three-dimensional space, for example an axis x representing time, an axis y for the parameter values, and an axis z representing the parameters P0, P1 and P2."); 5:43–46 ("This method can include a preliminary step of *measuring network parameters* and associating the parameters with network service trends.") (emphases added). Contrary to WSOU's assertion, the claims' recitation of "measured *and/or calculated* parameter values" does not "refute[]" Microsoft's proposed "measurable" requirement. *See* Dkt. 49 at 16-

17. That parameter values can be calculated (as opposed to measured) does not negate the specification's requirement that network parameters are measurable.

3. "determining at two or more times the value of a service indicator", "determining a trend of the indicator", and "determining as a function of the trend of the indicator"

Microsoft's Proposed Construction	WSOU's Proposed Construction
computing [at two or more times the value of a service indicator / a trend of the indicator / a time of the service indicator crossing a defined threshold] using the [measured and/or calculated parameter values / determined indicator values / trend of the indicator]	Plain and ordinary meaning

The parties agree that "determining" is not interchangeable with either the "measuring" or "calculating" terms, which are separately recited. *See* Dkt. 49 at 19. Microsoft's construction captures the '160 patent's requirement that the "determining" step involves *more* than mere "measurement" or "calculation[,]" which WSOU has implicitly disputed through its Preliminary Infringement Contentions ("PIC-454").

As WSOU notes, Claim 1 of the '160 patent recites "measuring and/or calculating" in addition to the "determining" limitations at issue. Dkt. 49 at 19. Moreover, the claim requires determining certain information "as a function" of other information—namely, as a function of "measured and/or calculated parameter values[,]" "determined indicator values[,]" and "the trend of the indicator." '160 patent, Claim 1. Only Microsoft's proposed construction gives meaning to the phrase "as a function of" by clarifying that the "determining step" is fulfilled by a computation[6] or analysis using the separately recited measurement and/or calculation; it cannot be the same thing as that measurement or calculation.

[6] WSOU's focus on the specific word "computing" is misplaced. An appropriate construction need not include the specific word "computing," but must incorporate the requirement of an additional step beyond "measuring" or "calculating" to arrive at "determining."

However, WSOU asserts in its Preliminary Infringement Contentions that, for example, step (e) of claim 1 ("determining a trend of the indicator as a function of said determined indicator values" is satisfied by the display of a chart showing measured bandwidth or latency changes over time. *See* PIC-454 at 12-13. But even assuming *arguendo* that such a chart shows a "trend," the specification makes clear that a display of measured values cannot satisfy the requirement of "determining" a trend "as a function" of those measured values.

Specifically, the specification confirms Microsoft's understanding of these phrases by repeatedly describing "determining" as involving some mathematical function or other operation using the separately recited measurements and/or calculations. *See, e.g.*, '160 patent, 1:52–54 ("In a further implementation the method further comprises a step of determining an indicator plane *by linear regression* of the measured and/or calculated network parameters."); 1:55–57 ("In a still further implementation determining the service trend includes *comparing* parameter values with predetermined thresholds."); 3:25–27 ("*Weighting* gives dominant importance to the most sensitive parameters in determining a given network service trend."); 5:6–9 ("For parameters represented with values from 0 to N along the z axis, a time remaining can then be determined from the portion of the intersection curve whose values of z are from 0 to N."); 5:36–42 ("A second implementation of the method of determining the service level trend, shown in FIG. 3, analyses specific instances of a plurality of network parameters to determine a trend. In this implementation, various network parameters are compared with predetermined threshold logic levels. Boolean criteria can be applied to the parameter values for this purpose.").

4. "service indicator"

Microsoft's Proposed Construction	**WSOU's Proposed Construction**
an indicator of the quality of a network service distinct from the network parameters	Plain and ordinary meaning

The "service indicator" term implicates the same dispute discussed above with regard to "network parameter." These two terms must be construed to have different meanings, and cannot both be satisfied by a single "metric."[7]

WSOU attempts to confuse this straightforward point by arguing that a requirement that "an indicator" must be "distinct from the network parameters" "would risk excluding, for example, a preferred embodiment where the service indicator is a 'plane' defined by a collection of parameters." Dkt. 49 at 20 (citing '160 patent, 4:11-33). But Microsoft's construction would not exclude such an embodiment. A service indicator that is "defined by a collection of parameters" is still *distinct from* those network parameters, just as a geometric plane is distinct from a collection of points that might be used to describe or define that plane. Particularly because "service indicator" and "network parameters" are recited separately in the claims, WSOU cannot credibly dispute that the two terms represent distinct elements of the invention. *See, e.g.*, *Helmsderfer*, 527 F.3d at 1382; *SpaceTime3D*, 2020 WL 7183538, at *8.

The intrinsic evidence further supports Microsoft's construction by demonstrating that a "service indicator" indicates the *quality* of a network service. The '160 patent generally relates to monitoring a network in order to forecast when a service might fail or when the quality of the service might fall below a particular level. For example, the Background section of the patent discusses prior art that "discloses a service quality indicator monitoring technique for use in telecommunications networks." '160 patent, 1:14–16. The purported invention of the '160 patent is to determine when certain service violations or service failures (*i.e.*, drop-offs in *quality*

[7] Microsoft can agree to construe "service indicator" in accordance with its plain and ordinary meaning as long as any such construction incorporates the requirement that a service indicator cannot also satisfy the "network parameter" element separately recited in the claims of the '160 patent.

or "level" of the service) will occur. *See, e.g.*, *id.*, Abstract ("The method is used in particular to determine a time remaining before a service violation or the crossing of a threshold."); 1:24–25 ("At present there are no tools for forecasting accurately the failure of a network service."); 4:53–56 ("It is therefore possible to establish a time remaining up to a threshold crossing, a level of service after a predetermined time period, a service provision capacity before failure"); 4:60–63 ("A trend having a high slope may be synonymous with imminent failure of the network service, and this kind of signal can enable appropriate preventive measures to be implemented"); 5:54–55 ("Thus there can be a step of forecasting the network service violation time.").

The specification also repeatedly refers to a "level of service" in discussing the claimed "service indicator," further indicating that the service indicators specifically indicate the level of quality of the provided network service. *See, e.g.*, *id.*, 2:57–58 ("A level of service indicator can be defined on the basis of measured and/or calculated data."); 2:64–67 ("In this way a number of network parameters, also known as service level specifications (SLSs), can be identified for preferential observation in order to determine the level of service."); 3:20–22 ("A plurality of network parameters can be selected to define the level of service as a function of the service or group of services concerned."); 4:13–14 ("In a first implementation, shown in FIG. 2, a level of service indicator is defined by a geometrical shape"). These characterizations are consistent with how the patentee described service indicators to the Patent Office during prosecution. *See* Ex. 4, at 4 ("The trend indicators of the claimed invention are used, for example, to define service evolution forecasts, making it possible to establish functions such as time remaining for a threshold crossing and a *level of service* after a predetermined time.") (emphasis added); *see also* Ex. 5, at 6 ("A service indicator (voice quality) is estimated at regular intervals based on the determined parameters."). The intrinsic evidence thus overwhelmingly demonstrates that the

"service indicator" is used to indicate the "quality" of a network service, as Microsoft' construction requires.

5. "determining as a function of the trend of the indicator a time of the service indicator crossing a defined threshold"

Microsoft's Proposed Construction	WSOU's Proposed Construction
determining as a function of the trend of the service indicator the time remaining for the indicator crossing a defined threshold	Plain and ordinary meaning

The parties' dispute centers on whether claim 1 of the '160 patent requires determining *the time remaining for* the indicator crossing a defined threshold. As the specification explains, and the patentee's statements during prosecution confirm, this requirement is a defining feature of the claimed invention of the '160 patent. Microsoft's construction thus requires "a time of the service indicator crossing a defined threshold" to refer to the time *remaining* until the indicator crosses the threshold, consistent with the specification and the file history.

The '160 patent's disclosure, beginning with the Abstract, makes clear that the ability to forecast the time remaining before a service violation occurs is central to the invention. *See* '160 patent, Abstract ("The method is used *in particular* to determine a time *remaining* before a service violation or the crossing of a threshold."). The specification proceeds to confirm that this is not merely an optional feature that the patent may cover, but a function that is inherent in the claimed method. *See, e.g.*, *id.*, 2:15–21 ("Thus the invention indicates a trend of the measured indicator, unlike the above-mentioned patent application WO 01/80492, for example. The trend *can show* whether the indicator is likely to cross a defined threshold or even determine *when it will cross the threshold*."); 4:52–54 ("These trend indicators are used to define service evolution forecasts, for example. It is therefore possible to establish a time remaining up to a threshold crossing"); 6:9–15 ("The signals 12 can indicate different crossings, for example a warning signal can therefore be provided, such as: a trend threshold crossing warning signal; a time

remaining before a service violation threshold crossing warning signal; or any other appropriate warning signal to warn the network operator of how the service is changing."). Consistent with the specification's focus on the invention's specific forecasting capabilities, Microsoft's construction requires the disputed claim language to refer to determining a time remaining for the indicator to cross a defined threshold.

The prosecution history further supports Microsoft's construction. The limitation "determining as a function of the trend of the indicator a time of the service indicator crossing a defined threshold" was originally recited in a dependent claim as a "subsequent step" to independent claim 1. *See* U.S. Patent App. No. 10/307,461, filed Dec. 2, 2002, 12:15-18. The Examiner initially rejected this claim (among other claims) as anticipated by the prior art reference WO 01/80492 ("Clark"). Following the rejections based on Clark, the patentee cancelled the dependent claim reciting the "time of the service indicator crossing a defined threshold" limitation and added the limitation as step within independent claim 1. *See* Ex. 5 at 6. Thereafter, the Examiner *again* determined that this limitation was anticipated by Clark, explaining:

> Contrary to Applicant's interpretation of Clark reference, Clark clearly teaches: The value of R (reads on trend) is compared to a threshold value and an indication transferred to SNMP Agent (307, fig. 3) should the value of R be below said threshold value, according to Fig. 7 steps 731 and 734 (page 13 lines 5-6). This clearly reads on applicant's claim limitation such as: determining as a function of the trend of the indicator a time service indicator crossing a defined threshold.").

Ex. 6 at 5.

In order to overcome this anticipation rejection, the patentee represented to the Examiner that unlike Clark, the claimed method of the '160 patent allowed for the forecasting of "time *remaining* for a threshold crossing and a level of service after a predetermined time." Ex. 4, at 3-

4 (emphasis added). The patentee further explained: "In other words, Clark does not disclose determining a time that a service indicator *will* cross a defined threshold as a function of the indicator, *as required by the* claim." *Id.* at 4 (emphasis added). In response to this explanation of the distinction between the claimed invention and Clark, the Examiner allowed the '160 patent to issue.

WSOU attempts to downplay the significance of the explanation that the patentee provided to the Examiner in order to overcome Clark, which ultimately allowed for the '160 patent's issuance, arguing that the patentee's remarks do not constitute "a clear and unambiguous disavowal of claim scope." Dkt. 49 at 21–22 (citations omitted). WSOU is wrong. Consistent with the patent's fundamental focus on prediction, the patentee used the future tense and mandatory language to explicitly confirm that determining when the threshold crossing *will* occur (*i.e.*, "time remaining*") is required* by the claim, rather than "a non-limiting and exemplary advantage" as WSOU argues. Dkt. 49 at 22.

Moreover, even if the patentee's remarks were not clear and unambiguous, "[a]ny explanation, elaboration, or qualification presented by the inventor during patent examination is relevant, for the role of claim construction is to 'capture the scope of the actual invention' that is disclosed, described, and patented." *Fenner Invs., Inc. v. Cellco P'ship*, 778 F.3d 1320, 1323 (Fed. Cir. 2015). Furthermore, "the interested public has the right to rely on the inventor's statements made during prosecution, without attempting to decipher whether the examiner relied on them, or how much weight they were given." *Id.* at 1325. Accordingly, WSOU's attempt to run away from the statements the patentee made during prosecution are improper, especially where, as here, such statements are found throughout the disclosures of the patent specification.

6. "neural network determines rules of association between a service trend and service parameter values"

Microsoft's Proposed Construction	WSOU's Proposed Construction
Indefinite	Plain and ordinary meaning

The parties appear to agree that "rules of association" is not a term of art within the field of network monitoring that would reasonably inform a Skilled Artisan as to the scope of this claim limitation absent a meaningful disclosure explaining this phrase. Because the '160 patent does not contain such a disclosure, this phrase is indefinite.

The phrase "rules of association" appears only once in the specification, and is recited exactly as it is in claim 7, with no description as to *what* such rules actually constitute. '160 patent, 1:64–67 ("In another implementation the method further comprises a training step in which the neural network determines rules of association between a service trend and service parameter values."). Furthermore, the only other instance of the word "association" in the specification does not clarify the meaning of the disputed phrase. Specifically, the specification includes a table that "sets out one *example* of association and weighting between a network service and service parameters." *Id.*, 3:27–29 (emphasis added). Again, neither this description nor the reference table (*see id.*, 3:35–45) sheds light on what, if any, "rule" of association is determined.

The only language of the patent that WSOU identifies as relevant to the recited "rules of association" relate to the "training step" separately recited in claim 7. *See* Dkt. 49 at 23 (citing '160 patent, 6:16–36). But this passage does not mention any "association," and the "rules" discussed are "[e]rror gradient backpropagation rules[.]" '160 patent, 6:23–24. The passage does not explain any association between elements, and WSOU offers no explanation as to why a Skilled Artisan would understand "error gradient backpropagation rules" or any other undescribed "training rules" to constitute "rules of association."

WSOU also argues that Microsoft "equivocates" by addressing the specious anticipated contention that "weighting" somehow constitutes a "rule of association." But Microsoft's argument is not an equivocation; the '160 patent describes weighting in reference to "one example" of association, and contains no explanation as to how weighting constitutes a "rule," or what else could conceivably constitute a "rule of association." Unless WSOU contends that "weighting" is the only "rule of association" contemplated by the patent, then the scope of this limitation remains indeterminate and therefore indefinite. *See Nautilus*, 572 U.S. at 901; *IPXL*, 430 F.3d at 1383–84.

7. "calculating a mathematical expectation of financial loss as a function of the network service trend determined"

Microsoft's Proposed Construction	WSOU's Proposed Construction
Indefinite	Plain and ordinary meaning

The phrases "mathematical expectation" and "financial loss" represent vague concepts that are not given any meaning by the '160 patent. "Financial loss" could conceivably refer to any number of different scenarios, and the method of calculating different types of financial loss could vary dramatically. *See, e.g.*, *Harvard Sav. Bank v. Sec. Nat'l Ins. Co.*, No. 15 CV 11674, 2017 WL 2560900, at *4 (N.D. Ill. June 12, 2017) (referring to "twenty-four different types of financial losses that are insured" in a disputed bond). Moreover, "mathematical expectation" has no meaning in the art and, without additional guidance from the specification, appears to be duplicative of the "calculating" limitation.

Because WSOU cannot identify anything in the patent's disclosure informing a Skilled Artisan as to the meaning of this phrase, WSOU resorts to attacking the form of Microsoft's challenge, arguing that the deficiencies Microsoft identifies go toward the enablement requirement of § 112, rather than indefiniteness. While Microsoft agrees that this limitation suffers from multiple deficiencies under § 112, WSOU's argument is not responsive to the fact

that the '160 patent fails to inform a Skilled Artisan as to the scope of this limitation, and is therefore indefinite in addition to the other reasons for its invalidity. *See Nautilus*, 572 U.S. at 901.

WSOU's suggestion that "actual claim language" supplies the requisite definiteness misses the mark. For example, WSOU notes that "calculating" is recited "in terms of *what* must be calculated ('a mathematical expectation of financial loss')[,]" Dkt. 49 at 26, without addressing the fact that the phrases "mathematical expectation" and "financial loss" are the source of the limitation's indefiniteness. WSOU further states that "a person of ordinary skill in the art would know to look to the specification for examples of *how* the claimed 'calculating' may be performed." *Id.* But the Skilled Artisan would be unable to do so in this case precisely because the specification does *not* provide examples of how a "mathematical expectation of financial loss" is to be calculated.

Finally, in arguing that the phrase "mathematical expectations" is not duplicative of "calculating," WSOU offers a circular definition of that is not based on any part of the disclosure and does not confer meaning to this limitation. *See id.* (stating that "mathematical expectation" "refers to *what* is being calculated—*i.e.*, 'calculating *a mathematical expectation of financial loss* as a function of the network service trend determined'."). Simply repeating the claim language does not provide reasonable certainty as to what the language means.

8. "determining a capacity to provide a network service at a given time"

Microsoft's Proposed Construction	**WSOU's Proposed Construction**
Indefinite	Plain and ordinary meaning

Claim 11, which recites the phrase "determining a capacity to provide a network service at a given time," is indefinite because the '160 patent offers competing meanings for the term "capacity" with no guidance as to how to choose between them in the context of the claim. First,

the specification describes "capacity" in reference to a network's ability to support a service. *See* '160 patent, 5:26–29 ("Trend determination can also be used to determine the service provision capacity at a given date. If the level of service is forecast at a given level of a given time, a service provision capacity at that time can be determined."). Immediately thereafter, however, the specification indicates that "capacity" may also refer to a service provider's willingness to provide a service. *See id.*, 5:29–32 ("A capacity to enter into service level agreements before reaching a saturation service level can therefore be defined.").

Where, as here, there are multiple potential constructions of a term and the intrinsic record does not provide a reasonable basis to decide between the constructions, the claim is indefinite. *See Teva*, 789 F.3d at 1341 (Fed. Cir. 2015); *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1371 (Fed. Cir. 2015) (explaining that indefiniteness results when no informed and confident choice is available among the contending definitions."); *Light Transformation*, 2014 WL 3402125, at *9.

WSOU's appeal to the general proposition that "[b]readth is not indefiniteness" does not save the claim. *See* Dkt. 49 at 27 (citations omitted). "Breadth defined within the language of the patent is permitted. . . . Breadth stemming from ambiguity is not." *Int'l Test Sols., Inc. v. Mipox Int'l Corp.*, No. 16-cv-00791-RS, 2017 WL 1367975, at *5 (N.D. Cal. Apr. 10, 2017).

C. Terms of U.S. Patent No. 8,274,902 (Case No. 6:20-cv-00465-ADA)

1. "network that branches, downstream of the collection point"

Microsoft's Proposed Construction	WSOU's Proposed Construction
refers to a tree network	Plain and ordinary meaning

The parties dispute whether the recited "network that branches, downstream of the collection point" necessarily refers to a tree network, as opposed so some other unidentified network structure. Both the specification and WSOU's own extrinsic evidence confirm that the recited network must be a tree network, consistent with Microsoft's construction.

The specification of the '902 patent explicitly states, without reference to any particular embodiment, that its "method can be applied to any packetized communication network that may be represented by a *tree graph*." '902 patent, 2:36–37 (emphasis added). The specification goes on to explain that "wireless GPRS networks such as the network of FIG. 1 are one example where our method is especially useful. However, applications of our method are *not limited* to GPRS networks or to wireless networks." *Id.*, 2:37–41 (emphasis added). The patentee was careful to expressly set forth which network characteristics (GPRS and wireless) are *not* necessary elements of the invention so as to preserve other embodiments, but included no such language with regard to the requirement that the method be applied on a tree network.

Microsoft's construction is further supported by the specification's description of the various embodiments of the claimed method, all of which are applied on a tree network. *See, e.g.*, 2:63–65 ("The monitoring device *needs to know the topology of the tree network downstream of its location* in order to be able to infer packet loss rates according to the method to be described.") (emphasis added); 3:4–8 ("Turning back to FIG. 3, it should be noted that the number of levels in the tree graph is arbitrary and a five-level graph has been selected solely for purposes of illustration. In some practical applications, our method will be applied to networks whose tree graph has fewer than five levels."); 4:19–24 ("There is a criterion that an intermediate node must meet in order for it to be eligible as an inner node. To be eligible, the selected intermediate node must be a root node relative to at least two end nodes via distinct branches that intersect at the selected node. For example, node n2 of FIG. 3 is a branch point of the tree graph."); 4:57–60 ("We will now describe a procedure, referred to here as Algorithm 2, for estimating the packet loss rate on a path P. from a selected intermediate node n, to a selected intermediate node n, lying below n, in the tree graph.").

The extrinsic evidence that WSOU offers in opposition to Microsoft's construction actually supports Microsoft's position. *See* Dkt. 49 at 28 (quoting Blanton, A., and Haynes, S., Microsoft Computer Dictionary Fifth Edition, Microsoft Press, 2002, p. 22. (Dkt. 49, Ex. A).). The first definition of "branch" in the technical dictionary on which WSOU relies expressly limits the term "branch" to a "tree structure." *See* Dkt. 49, Ex. A (defining "branch" as "[a] node intermediate between the root and the leaves in some types of logical *tree structure*, such as the directory *tree* in Windows or a tape distribution organization.") (emphasis added)). The second definition, on which WSOU seeks to rely, is inapposite here because it simply describes the connection "between two items" in a network, rather than the branching of the network itself, as contemplated by the disputed claim. *See id.*

Finally, WSOU's criticism that Microsoft has proposed a "non-definition" by defining this term based on the type of network to which it "refers" is legally baseless. *See* Dkt. 49 at 28 29. Courts, including this Court, routinely adopt claim constructions in this form. *See, e.g.*, *NCS Multistage Inc. v. Nine Energy Serv.*, 6:20-CV-00277-ADA, Dkt. 56 (W.D. Tex. Jan. 14, 2021) (adopting construction of plain and ordinary meaning "where the plain and ordinary meaning can *refer to* both an inner surface and a measured diameter."); *Morvil Tech., LLC v. Medtronic Ablation Frontiers, LLC*, No. 10–CV–2088 BEN (BGS), 2012 WL 3277272, at *9 (S.D. Cal. Aug. 10, 2012); *Prism Techs. LLC v. Verisign, Inc.*, 512 F. Supp. 2d 174, 184 (D. Del. 2007) (adopting constructions setting forth what a disputed term "refers to").

2. "estimating a packet loss rate" and "an estimate of a packet loss rate"

Microsoft's Proposed Construction	**WSOU's Proposed Construction**
calculating an approximate packet loss rate / a calculation of approximate packet loss rate	Plain and ordinary meaning

Microsoft's proposed construction for these terms captures the well-understood meaning of "estimate" as well as the '902 patent's requirement that the process of "estimating" involves more than mere measurement. WSOU proposes a construction of "plain and ordinary meaning,"

but proceeds to argue that "estimate" in the context of the '902 patent means something other than the ordinary meaning of an "approximation." *See* Dkt. 49 at 29.

The specification's only examples of "estimating" packet loss involve the application of algorithms (including a "computation" or "calculation" of some kind) to arrive at the claimed "estimate." *See, e.g.*, '902 patent, 4:9–13 ("We will now describe a procedure, referred to herein as Algorithm 1, for estimating the packet loss rate f0i from a root node n0 to a selected intermediate node nj. Thus, for example, Algorithm 1 might be applied to estimate the loss rate from the root node to node n2 of FIG. 3"); 4:49–56 ("The next step 140 is to compute an estimate of the packet loss rate f0i from the root node n0 to the selected inner node ni using the information obtained in step 110. Formulas for making the computation are provided below. In the example of FIG. 3, the loss rate f02 is estimated from the end-to-end loss rates Fp, the pair fractions Wlm, and F4,6;δ."); 4:57–60 ("We will now describe a procedure, referred to here as Algorithm 2, for estimating the packet loss rate on a path Pjk from a selected intermediate node nj to a selected intermediate node nk lying below nj in the tree graph.").

WSOU's insistence that an "estimate" of packet loss does not refer to an "approximation" is inconsistent with its position that this term be afforded its plain and ordinary meaning. As many courts have found, the term "estimate" and variations thereof are ordinarily understood to refer to an approximation, as Microsoft's construction recognizes. *See, e.g.*, *Personalized User Model LLP v. Google Inc.*, No. 09–525–LPS, 2012 WL 295048, at *17 (D. Del. Jan. 25, 2012) (construing "estimating" to mean "approximating or roughly calculating"); *Applied Signal Tech., Inc. v. Emerging Markets Comm'cns, Inc.*, No. C 09–2180 SBA, 2011 WL 500786 (N.D. Cal. Feb. 9, 2011) (construing "estimating channel characteristics" to mean "determining approximate values of the four channel characteristics . . ."). If the patent drafter wanted to claim an exact

measurement of packet loss rate, the patent drafter could have recited, for example, "determining" the packet loss rate, a term that is used elsewhere in the specification but not found in the claims. *See, e.g.*, '902 patent, 3:45-46 ("There are currently available monitoring devices that can *determine* the packet loss rate") (emphasis added).

3. "packet loss rate"

Microsoft's Proposed Construction	WSOU's Proposed Construction
the fraction of packets that are lost over a suitable time-averaging interval	the fraction of packets that are lost over a suitable time interval

The parties offer nearly identical constructions for "packet loss rate," but WSOU's proposal reveals a fundamental problem with the '902 patent's description of this term. As WSOU recognizes, the '902 patent expressly describes "packet loss rate" as "the fraction of packets that are lost over a suitable time-*averaging* interval[.]" '902 patent, 3:46–47. However, WSOU recognizes that the term "time-averaging" is ambiguous, and therefore proposes simply dropping "averaging" from the specification's definition to avoid having "the jury determine how [time-averaging] . . . might affect claim scope." Dkt. 49 at 30. WSOU provides no other basis for departing from the language of the specification. This position is untenable, as WSOU would have the jury determine how the term "suitable," which is also not recited in the claims, would affect claim scope.[8] At best, WSOU has not provided a legitimate basis to depart from the specification's explicit language defining "packet loss rate." Of course, should the Court determine that the '902 patent fails to give meaning to the term "packet loss rate," or that the express definition for this term given by the patent is ambiguous (as WSOU contends), then it

[8] Moreover, WSOU's proposal of "plain and ordinary meaning" for the many disputed terms that are the subject of this briefing suggests that WSOU intends for the jury to make many determinations of claim scope that are not immediately clear from the text of the asserted patents.

should hold that this term is indefinite. *See Nautilus*, 572 U.S. at 901; *IPXL*, 430 F.3d at 1383–84.

4. "wherein the collected data relate to packet losses on the portion of a GPRS core network extending from the collection point to a plurality of [base / mobile] stations"

Microsoft's Proposed Construction	WSOU's Proposed Construction
Indefinite	Plain and ordinary meaning

Claims 4 and 5 recite "base stations" and "mobile stations," respectively, that are a "portion of a GPRS core network." But this language requires an impossibility because base stations and mobile stations are part of the radio access network, not a GPRS core network, as one of ordinary skill would understand. The intrinsic evidence confirms that the core network is *separate* from base stations and mobile stations. *See, e.g.*, Ex. 3, US 2010/0165862, FIG. 1 (showing the core network ("CN") as entirely separate from the base stations and mobile stations).[9] Nothing in the specification suggests that the patent contemplated a special definition – contrary to the use of this term in the art – of a core network that would include base stations or mobile stations. Claims that require an impossibility, such as claims 4 and 5 of the '902 patent, are indefinite. *See, e.g.*, *Invensys Sys., Inc. v. Emerson Elec. Co.*, No. 6:12–cv–799, 2014 WL 3976371, at *5 (E.D. Tex. Aug. 6, 2014) (holding claims indefinite because they required "performing a calculation that is mathematically impossible").

[9] This reference is cited in the '902 patent's file history and is therefore intrinsic evidence. *See V-Formation, Inc. v. Benetton Grp. SpA*, 401 F.3d 1307, 1311 (Fed. Cir. 2005) ("This court has established that 'prior art cited in a patent or cited in the prosecution history of the patent constitutes intrinsic evidence.") (citations omitted); *Greenthread, LLC v. Samsung Elecs. Co., Ltd.*, 2020 WL 1911200, at *3 (E.D. Tex. Apr. 20, 2020) ("The intrinsic evidence includes the claims themselves, the specification, and the prosecution history.") (citations omitted).

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CERTIFICATE OF SERVICE

I certify that on January 29, 2021, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will send notification of such filing to all counsel of record as identified below.

/s/ Irene Yang
Irene Yang